

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/910,090	MOHRI, MEHRYAR	
	<b>Examiner</b>	<b>Art Unit</b>	
	James S. Wozniak	2655	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/4/2005.
2. ☒ The allowed claim(s) is/are 30-45, 47-49, and 51-55.
3. ☒ The drawings filed on 2/4/2005 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|   | 9. <input type="checkbox"/> Other _____   |

## **DETAILED ACTION**

### ***Response to Amendment***

1. In response to the office action from 11/5/2004, the applicant has submitted an amendment, filed 2/4/2005, amending the drawings and Claims 30-45, 47-49, and 51-55, while canceling Claims 46 and 50 and arguing to traverse the art rejection based on the limitation regarding the method step for leaving a state with its weights pre-cross multiplied by an epsilon distance from a state “p” to a state “q” (*Amendment, Pages 9-10*). The applicant’s arguments have been fully considered and claims 30-55 are allowable over the prior art of record for the reasons noted by the applicant and those given below.
2. Due to the cancellation of Claims 46 and 50, the examiner has withdrawn the previous 35 U.S.C. 101 rejection.
3. Due to the drawing amendments, the examiner has withdrawn the previous objections directed towards minor informalities.
4. Due to the terminal disclaimer filed 2/4/2005, the examiner has withdrawn the previous double patenting rejection.

*Allowable Subject Matter*

5. **Claims 30-45, 47-49, and 51-55** are allowable over the prior art of record.

6. The following is an examiner's statement of reasons for allowance:

With respect to **Claim 30**, the prior art of record does not specifically teach or fairly suggest a computer readable medium that stores a computer program for implementing a method for use in natural language processing for speech recognition that removes an empty string (epsilon) from a finite state machine by calculating an epsilon closure for each state "p" in an input automaton using the equation listed on page 17 of the specification. By performing this calculation, all of the outgoing paths (including epsilon paths) from a first state "p" to a second state "q" are calculated. Next the epsilon (empty) paths are removed according to the equations listed on Pages 17-18 of the specification and remaining non-empty transitions are modified by pre-cross multiplying the weights of the state "q" by the epsilon distance from state "p" to state q" to account for the removed empty string transitions in the automaton. Inaccessible states resulting from this calculation are not pre-cross multiplied, as are the non-empty transitions, and are removed using a depth first search. The result of the above noted process is a reduced size word lattice for use in speech recognition. The prior art of record does not explicitly teach or specifically suggest the above noted method stored as a program on a computer readable medium, thus Claim 30 is allowable over the prior art of record.

With respect to other related prior art:

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Morley et al (U.S. Patent: 6,499,132) teaches a means of removing an epsilon transition according to a depth first search (*Col. 14, Lines 1-4*), but does not teach the calculation of an epsilon closure or the modification of the weight of a state “q” as is noted above with respect to Claim 30.

Kempe (*U.S. Patent: 6,760,636*) teaches a means for epsilon removal and state modification using concatenation (*Col. 20, Lines 32-40*), but does not teach the calculation of an epsilon closure or the modification of the weight of a state “q” as is noted above with respect to Claim 30.

Independent **claims 34, 38, 42, 54, and 55** contain subject matter similar to Claim 1, and thus, are allowable over the prior art of record for the same above noted reasons.

The dependent claims further limit independent claims that are allowable over the prior art of record, and thus, are also allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632


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and email is James.Wozniak@uspto.gov. The examiner can normally be reached on Mondays-Fridays, 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached at (703) 305-4827. The fax/phone number for the Technology Center 2600 where this application is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology center receptionist whose telephone number is (703) 306-0377.

James S. Wozniak  
5/3/2005



DAVID L. OMETZ  
PRIMARY EXAMINER